Infrared Absorption Spectra of Some Monovalent Metal Salts of Fatty Acids

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Nippon Kagaku Zasshi (Journal of the Chemical Society of Japan, Pure Chemistry Section), **84**, 392 (1963)

Infred absorption spectra of lithium, sodium, potassium and silver salts of fatty acids of different chain lengths have been measured from 4000 to 400cm^{-1} in solid states as well as in aqueous solutions except for silver salts. In solid states, the absorption bands of the alkyl group are affected mainly by the chain length, whereas those of the carboxylate ion by the sort of metal salts. The changes in the frequency and appearance of those bands have been discussed in connection with the effect of the carboxylate and the metal ions and also with the change in the molecular configuration in crystals. In aqueous solutions, the spectra of the salts are independent of the metal ion and the bands assigned to wagging (or twisting) and rocking vibrations of the methylene group are very diffuse as compared with those in solid states. These facts show that in aqueous solutions the $C_nH_{2n+1}COO^-$ ion is free from the metal ion and the methylene groups in the alkyl chain are spinning freely about the C-C bonds.

On the Coagulation Theory of Colloids and the Coalescence of Mercury Droplets in Aqueous Solutions

Rempei GOTOH and Akira WATANABE

Nippon Kagaku Zasshi (Journal of the Chemical Society of Japan, Pure Chemistry Section) **84**, 480 (1963)

The Verwey-Overbeek theory of coagulation of hydrophobic colloids, which was derived on the basis of the free energy of interaction between colloid particles, has already been examined experimentally by various authors by using silver iodide sols. However, none of them has so far been carried out under the condition in which the electrical potential of particle surfaces and the ionic strength of the